Patent claims

1. A radiation-emitting optoelectronic component (1) which is connected to a heat sink (3) and is intended for pulsed operation with the pulse duration D, temperature changes of the optoelectronic component taking place with a thermal time constant τ during pulsed operation, characterized in that the thermal time constant τ is matched to the pulse duration D in order to reduce the amplitude of the temperature changes.

2. The optoelectronic component as claimed in claim 1, characterized in that the thermal time constant τ is $\tau > 0.5$ D for.

3. The optoelectronic component as claimed in claim 1, characterized in that the thermal time constant τ is $\tau > D$.

4. The optoelectronic component as claimed in one of claims 1 to 3, characterized in that the temperature changes are less than $\Delta T = 12$ K.

5. The optoelectronic component as claimed in one of the preceding claims, characterized in that pulsed operation is effected at a pulse frequency in the range from 0.1 Hz to 10 Hz.

6. The optoelectronic component as claimed in one of the preceding claims, characterized in that

it has an optical output power of 20 W or more.

7. The optoelectronic component as claimed in one of the preceding claims,
characterized in that
the heat sink (3) is actively cooled.

8. The optoelectronic component as claimed in claim 7,
characterized in that
the heat sink (3) has one or more microchannels (6) through which a coolant flows.

9. The optoelectronic component as claimed in claim 8,
characterized in that
a wall of the heat sink that adjoins the optoelectronic component (1) has a wall thickness (7) of 0.5 mm or more.

10. The optoelectronic component as claimed in claim 8,
characterized in that
a wall of the heat sink that adjoins the optoelectronic component (1) has a wall thickness (7) of between 1 mm and 2 mm inclusive.

11. The optoelectronic component as claimed in one of the preceding claims,
characterized in that
the heat sink (3) contains copper.

12. The optoelectronic component as claimed in one of the preceding claims,
characterized in that
the optoelectronic component (1) is a laser diode bar.

13. A method for producing an optoelectronic component as claimed in one of claims 8 to 12, characterized in that a wall of the heat sink (3) that adjoins the optoelectronic component (1) has a wall thickness (7) and the temperature change and/or the maximum temperature of the component (1) during operation is set by dimensioning the wall thickness (7).

14. A method for producing a radiation-emitting optoelectronic component (1) which is connected to a heat sink (3) and is intended for pulsed operation with the pulse duration D, temperature changes of the optoelectronic component taking place with a thermal time constant τ during pulsed operation, characterized in that the thermal time constant τ is matched to the pulse duration D in order to reduce the amplitude of the temperature change.

15. The method as claimed in claim 14, characterized in that the thermal time constant τ is set by dimensioning the area and/or the thickness of a substrate on which the optoelectronic component (1) is produced.